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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,132	05/04/2001	Dai-Liang Ting	JCLA5873	1182

7590

01/05/2004

J.C. PATENTS INC.  
4 Venture, Suite 250  
Irvine, CA 92618

EXAMINER

AKKAPEDDI, PRASAD R

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 01/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/849,132

Applicant(s)

TING ET AL.

Examiner

Prasad R Akkapeddi

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

2. The amendment of 10/20/2003 has clarified the 35 USC 112 issues raised in the previous Office action, thus the previous rejections are hereby withdrawn.

***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "the angle between

the slant surface and the substrate is about 3 to 10 degrees" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

4. Claim 3 is objected to because of the following informalities: The recited limitation "the angle between the slant surface and the substrate is about 3 to 10 degrees" is not shown in the drawings. As shown the slant surface is about 45 degrees from the substrate. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (Hayashi) (U.S. Patent No. 6,166,793) in view of Nishio et al. (Nishio) (U.S. Patent No. 5,914,825).

As to claims 1-3 and 11-12: Hayashi discloses a reflective liquid crystal display having a substrate with pixels, a plurality of diffusion symmetric slant

reflectors on the pixel (Fig. 3), (col. 4, lines 54-55), wherein the diffusion-symmetric slant reflectors have a gradual decrease height from a central point to the periphery (Fig. 3). Hayashi also discloses a reflection layer (col. 5, lines 59-64), as recited in claim 1. Hayashi discloses symmetrical slant surfaces and a plurality of bumps on the slant surfaces (Fig. 4), as recited in claim 2, and the angle between the slant surface and the substrate is 2.5 degrees or more (col. 3, lines 57-59), as recited in claim 3.

Hayashi does not disclose the plurality of bumps on the slant surface or a reflection layer on the slant reflectors.

Nishio in disclosing a reflector for display discloses slant reflectors having a slant surface (Figs. 9 and 10) with a gradual decreasing height from a central point toward a periphery and a plurality of bumps (roughness) on the slant surface. A light reflecting layer is provided on the serrated reflecting surface having fine roughness (col. 4, lines 31-32), i.e, bumps. The light reflective layer is made of metal such as aluminum or silver (col. 4, lines 31-34), as recited in claims 11-12.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the reflector configuration as disclosed by Nishio to the reflector of Hayashi such that images displayed on the display can be observed without being obstructed by surface-reflected light and also brightly observed in a wide angle of view.

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7. As to claims 4-10: Hayashi discloses several geometries on the surface of the reflector having depressions with cone shapes, triangular shapes, rectangular shapes, pyramidal shapes, prismatic shapes etc., (Fig. 3-5) and (cols. 3-4 and elsewhere) and alignment of the reflectors in a single direction is shown in Fig. 2 and different direction is shown in Figs. 3-5, as recited in claims 4-9. The diffusion layer on the reflector is made from resin binder (col. 6, lines 37-59), as recited in claim 10.

Hayashi does not teach the specific projections of these slant surfaces onto the substrate and such projections taking a definite shape when projected. However, any slant surfaces having a definite geometric shapes when projected to a flat surface takes the shapes as identified.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include such projections due to simple geometrical nature of different shapes to exhibit bright image and excellent visibility of the images when the images are viewed from an angle wherein the reflection of external light is avoided (col. 2, lines 7-9).

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 703-305-4767. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

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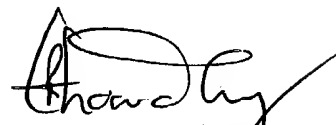
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 703-305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0530.



Prasad R Akkapeddi, Ph.D  
Examiner  
Art Unit 2871

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T. Chowdhury  
Primary Examiner